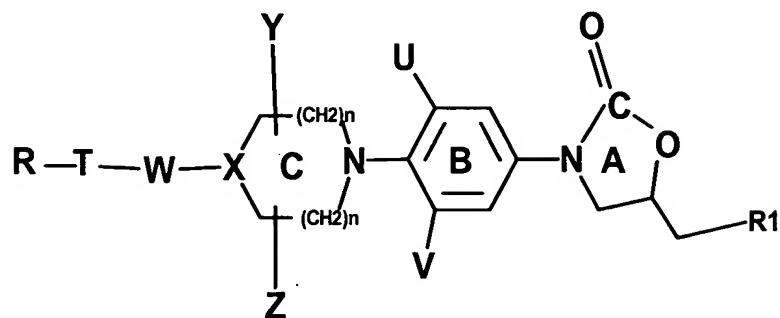


# CLAIMS:

1. A compound having the structure of Formula I



FORMULA I

and its pharmaceutically acceptable salts, enantiomers, diastearomers, N-oxides, prodrugs or metabolites, wherein

**T** is five to seven membered heterocyclic ring, aryl, substituted aryl, bound to the ring **C** with a linker **W** and the heterocyclic and aryl rings are further substituted by a group represented by **R**,

wherein **R** is selected from the group consisting of alkyl ( $C_{1-6}$ ), halogen-CN,  $COR_5$ ,  $COOR_5$ ,  $N(R_6, R_7)$ ,  $CON(R_6, R_7)$ ,  $CH_2NO_2$ ,  $NO_2$ ,  $CH_2R_8$ ,  $CHR_9$ ,  $-CH = N-OR_{10}$ ,  $-C=CH-R_5$ , wherein  $R_5$  is selected from the group consisting of H, optionally substituted  $C_1-C_{12}$ , alkyl,  $C_{3-12}$ , cycloalkyl, aryl, heteroaryl;  $R_6$  and  $R_7$  are independently selected from the group consisting of H, optionally substituted  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy;  $R_8$  and  $R_9$  are independently selected from the group consisting of H,  $C_{1-6}$  alkyl, F, Cl, Br,  $C_{1-12}$  alkyl substituted with one or more of F, Cl, Br, I,  $OR_4$ ,  $SR_4$ ,  $N(R_6, R_7)$  wherein  $R_4$  is selected from the group consisting of H,  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy,  $C_{1-6}$  alkyl substituted with one or more F, Cl, Br, I or

OH and R<sub>6</sub> and R<sub>7</sub> are the same as defined earlier, R<sub>10</sub> is selected from the group consisting of H, optionally substituted from H, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl, aryl, heteroaryl;

n is an integer in the range from 0 to 3;

5 X is CH, CH-S, CH-O and N

Y and Z are independently selected from the group consisting of hydrogen, C<sub>1-6</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>0-3</sub> bridging group;

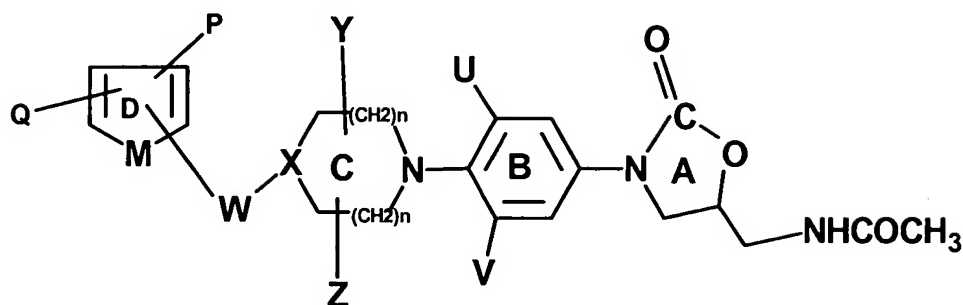
10 U and V are independently selected from the group consisting of optionally substituted C<sub>1-6</sub> alkyl, F, Cl, Br, C<sub>1-12</sub> alkyl substituted with one or more of F, Cl, Br, I, preferably U and V are hydrogen or fluoro;

W is selected from the group CH<sub>2</sub>, CO, CH<sub>2</sub>NH, -NHCH<sub>2</sub>, -CH<sub>2</sub>NHCH<sub>2</sub>, -CH<sub>2</sub>-N(R<sub>11</sub>)CH<sub>2</sub>-, -CO-CO-, CH<sub>2</sub>(R<sub>11</sub>)N-, CH(R<sub>11</sub>), S, CH<sub>2</sub>(CO), N(R<sub>11</sub>) wherein R<sub>11</sub> is hydrogen, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl, aryl or heteroaryl;

15 R<sub>1</sub> is selected from the group consisting of -NHC(=O)R<sub>2</sub> wherein R<sub>2</sub> is hydrogen, C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl substituted with one or more of F, Cl, Br, I or OH; N(R<sub>3</sub>, R<sub>4</sub>); -NR<sub>2</sub>C(=S)R<sub>3</sub>; -NR<sub>2</sub>C(=S)SR<sub>3</sub> wherein R<sub>2</sub> is the same as defined above and R<sub>3</sub> and R<sub>4</sub> are independently selected from the group consisting of H, C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl substituted with one or more of F, Cl, Br, I or OH.

20

2. A compound having structure of Formula II



FORMULA II

and its pharmaceutically acceptable salts, enantiomers, diastereomers, N-oxides, prodrugs or metabolites wherein

**M= O, S, NH, N-CH<sub>3</sub>;**

**X** is CH, CH-S, CH-O and N;

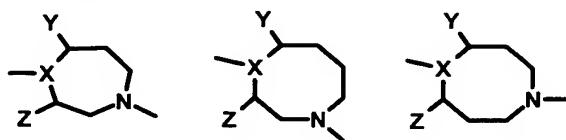
**Y and Z** are independently selected from the group consisting of hydrogen , C<sub>1-6</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>0-3</sub> bridging group;

**U and V** are independently selected from the group consisting of optionally substituted C<sub>1-6</sub> alkyl, F, Cl, Br, C<sub>1-12</sub> alkyl substituted with one or more of F, Cl, Br, I, preferably U and V are hydrogen or fluoro;

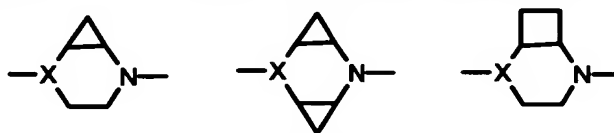
**W** is selected from the group consisting of CH<sub>2</sub>, CO, CH<sub>2</sub>NH, -NHCH<sub>2</sub>, -CH<sub>2</sub>NHCH<sub>2</sub>, -CH<sub>2</sub>-N (R<sub>11</sub>) CH<sub>2</sub> - , CH<sub>2</sub> ( R<sub>11</sub>) N -, CH ( R<sub>11</sub>) , S, CH<sub>2</sub>(CO), NH wherein R<sub>11</sub> is optionally substituted with C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl , aryl , heteroaryl except when M=S, Q=P=H, W=(C=O);

**n** is an integer in the range from 0 to 3; and,

**Q and P** are independently selected from the group consisting of -CN, COR<sub>5</sub>,  
 COOR<sub>5</sub>, N (R<sub>6</sub>, R<sub>7</sub>), CON (R<sub>6</sub>, R<sub>7</sub>), CH<sub>2</sub>NO<sub>2</sub>, NO<sub>2</sub>, CH<sub>2</sub>R<sub>8</sub>, CHR<sub>9</sub>, -CH=N-  
 OR<sub>10</sub>, C=CH-R<sub>5</sub>, wherein R<sub>5</sub> is selected from the group consisting of H,  
 optionally substituted C<sub>1-12</sub>alkyl, C<sub>3-12</sub> cycloalkyl, aryl, heteroaryl; R<sub>6</sub> and R<sub>7</sub>  
 are independently selected from the group consisting of H, optionally  
 substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy; R<sub>8</sub> and R<sub>9</sub> are  
 independently selected from the group consisting of H, C<sub>1-6</sub> alkyl, F, Cl, Br,  
 C<sub>1-12</sub> alkyl substituted with one or more of F, Cl, Br, I, OR<sub>4</sub>, SR<sub>4</sub>, wherein R<sub>4</sub> is  
 selected from the group consisting of H, C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub>  
 alkoxy, C<sub>1-6</sub> alkyl substituted with one or more F, Cl, Br, I or OH, N(R<sub>6</sub>, R<sub>7</sub>),  
 R<sub>10</sub> is selected from the group consisting of H, optionally substituted C<sub>1-12</sub>  
 alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl, aryl, heteroaryl except W=  
 (CO), Q and P =H and M=S, ring C in Formula II is 6-8 membered or of larger  
 size and the larger rings have either two or three carbons between each  
 nitrogen atom, comprising of

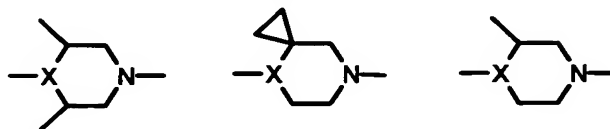


and may be bridged to form a bicyclic system as shown below,



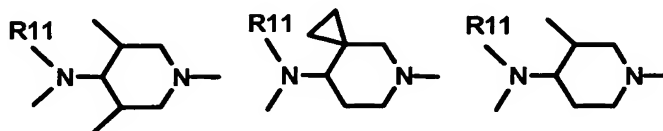
ring C is optionally substituted by Y and Z with alkyl groups, cycloalkyl

groups, fluoro group, carboxylic and corresponding esters, amides, substituted  
 alkyls or bridging alkyl groups are as shown below:



six membered ring C with  $X = -CH-(NR_{11})$ , (wherein  $R_{11}$  is the same as defined earlier) is selected from the group consisting of the following rings;

5



10



15

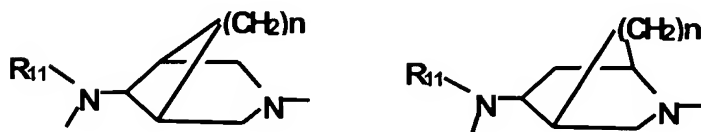


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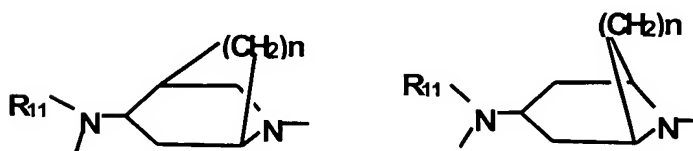
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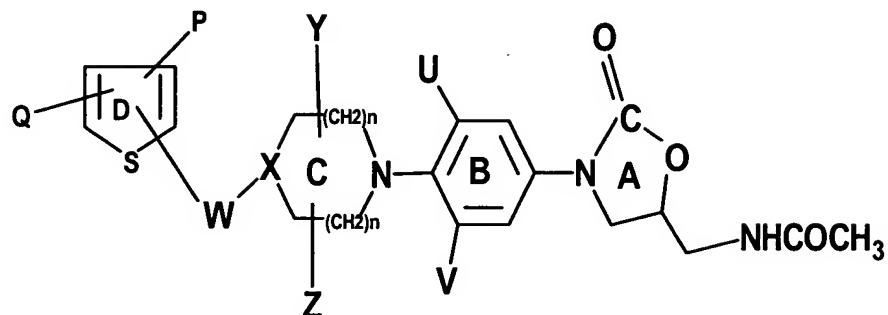
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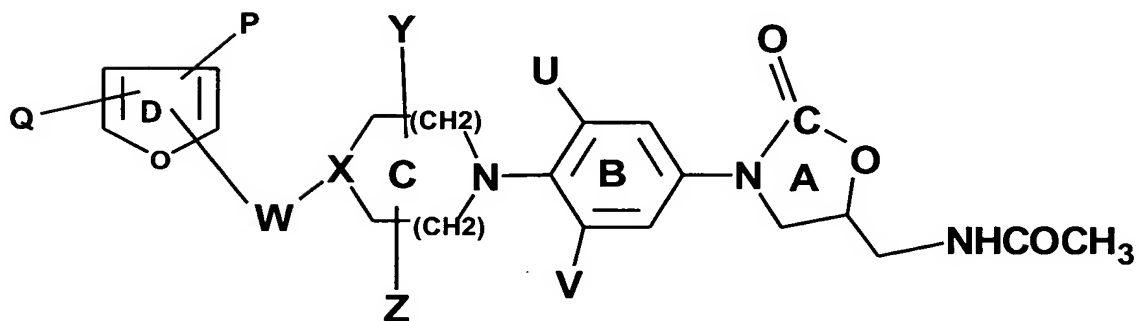


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wherein M = Sulphur and Oxygen as shown by Formulae III and IV respectively,



Formula III



Formula IV

wherein P, Q, U, V, X, Y, Z, W and n in Formulae III and IV as defined earlier for Formula I.

3. A compound selected from the group consisting of
  1. (S)-N-[[3-[3-Fluoro-4-[N-1-[4-(2-furoyl) piperazinyl]]phenyl]-2-oxo-5-oxazolidinyl] methyl]acetamide
  2. (S)-N-[[3-[3-Fluoro-4-[N-1[4-{2-furyl(5-formyl)methyl}]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide

3. (S)-N-[[3-Fluoro-4-[N-1[4-(2-furyl-(5-carboxyethyl)methyl)piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide
- 5 4. (S)-N-[[3-Fluoro-4-[N-1[4-(5-bromo-2-furoyl)]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl] methyl]acetamide
5. (S)-N-[[3-Fluoro-4-[N-1[4-(5-chloromethyl-2-furoyl)piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide
6. (S)-N-[[3-Fluoro-4-[N-1[4-(5-nitro-2-furoyl)piperazinyl]phenyl]-2-oxo-5-oxazolidinyl] methyl]acetamide
- 10 7. (S)-N[[3-[3-Fluoro-4-[N-1[4-{2-(2-thienyl)dicarbonyl}]piperazinyl]phenyl]2-oxo-5-oxazolidinyl]methyl]acetamide
8. (S)-N[[3-[3-Fluoro-4-[N-1[4-(3-furoyl)]piperazinyl]phenyl]2-oxo-5-oxazolidinyl]methyl] acetamide
- 15 9. (S)-N[[3-[3-Fluoro-4-[N-1[4-{2-furyl(5-bromo)methyl}]piperazinyl]phenyl ]2-oxo-5-oxazolidinyl]methyl]acetamide
10. (S)-N[[3-[3-Fluoro-4-[N-1[4-{2-thienyl(5-chloro)methyl}]piperazinyl]phenyl]2-oxo-5-oxazolidinyl]methyl]acetamide
- 20 11. (S)-N[[3-[3-Fluoro-4-[N-1[4-(2-furylmethyl)]piperazinyl]phenyl]2-oxo-5-oxazolidinyl] methyl]acetamide
12. (S)-N-[[3-[3-Fluoro-4-[N-1[4-(2-thienylmethyl)]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide
- 25 13. (S)-N[[3-[3-Fluoro-4-[N-1[4-(2-thienylacetyl)]piperazinyl]phenyl]2-oxo-5-oxazolidinyl] methyl]acetamide
14. (S)-N-[[3-[3-Fluoro-4-[N-1[4-{2-thienyl(4-bromo)methyl}]piperazinyl]phenyl]-2 oxo-5-oxazolidinyl]methyl]acetamide
- 30 15. (S)-N-[[3-[3-fluoro-4-[N-1-[4-{2-furyl-(5-nitro)methyl}]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide.

16. Hydrochloric salt of (S)-N-[[3-Fluoro-4-[N-1[4-{2-furyl(5-nitro)methyl}]piperazinyl] phenyl]-2-oxo-5-oxazolidinyl)methyl]acetamide
- 5 17. Citrate salt of (S)-N-[[3-Fluoro-4-[N-1[4-{2-furyl(5-nitro)methyl}]piperazinyl] phenyl]-2-oxo-5-oxazolidinyl)methyl]acetamide
18. (S)-N[[3-[3-Fluoro-4-[N-1[4-(2-pyrrolylmethyl)]piperazinyl]phenyl]2-oxo-5-oxazolidinyl)methyl]acetamide
- 10 19. (S)-N[[3-[3-Fluoro-4-[N-1[4-{2-thienyl(3-methyl)methyl}]piperazinyl]phenyl]2-oxo-5-oxazolidinyl)methyl]acetamide
20. (S)-N[[3-[3-Fluoro-4-[N-1[4-(3-furylmethyl)]piperazinyl]phenyl]2-oxo-5-oxazolidinyl] methyl]acetamide
- 15 21. (S)-N[[3-[3-Fluoro-4-[N-1[4-{2-thienyl(5-methyl)methyl}]piperazinyl]phenyl]2-oxo-5-oxazolidinyl)methyl]acetamide
22. (S)-N[[3-[3-Fluoro-4-[N-1[4-{2-pyrrole(1-methyl)methyl}]piperazinyl] phenyl]2-oxo-5-oxazolidinyl)methyl]acetamide
- 20 23. (S)-N[[3-[3-Fluoro-4-[N-1[4-{2-thienyl(5-nitro)methyl}]piperazinyl]phenyl]2-oxo-5-oxazolidinyl)methyl]acetamide
24. (S)-N[[3-[3-Fluoro-4-[N-1[4-[2-furyl{5-(N-thiomorpholinyl)methyl} methyl]piperazinyl] phenyl]2-oxo-5-oxazolidinyl)methyl]acetamide
- 25 25. (S)-N[[3-[3-Fluoro-4-[N-1[4-[2-furyl{5-(N-morpholinyl)methyl} methyl]]piperazinyl] phenyl]2-oxo-5-oxazolidinyl)methyl]acetamide
26. (S)-N-[[3-Fluoro-4-[N-1[4-{2-furyl(5-acetoxymethyl)methyl}]piperazinyl] phenyl]-2-oxo-5-oxazolidinyl)methyl]acetamide
- 30 27. (S)-N-[[3-Fluoro-4-[N-1[4-{2-thienyl(5-bromo)methyl}]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl)methyl]acetamide
28. (S)-N-[[3-Fluoro-4-[N-1[4-(5-nitro-2-furylmethyl)piperazinyl] phenyl]- 2-oxo oxazolidinyl)methyl]dichloroacetamide



29. (S)-N-[[3-[3-Fluoro-4-[N-1[4-(5-nitro-2-thienoyl)]piperazinyl]phenyl]2-oxo-5-oxazolidinyl]methyl]acetamide hydrochloride
30. (S)-N-[[3-[3-Fluoro-4-[N-1[4-(2',2'-diphenyl-2'-hydroxy acetyl)]piperazinyl]phenyl]2-oxo-5-oxazolidinyl]methyl]acetamide
- 5 31. (S)-N-[[3-[3-Fluoro[4-[3-(1 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )-6-[N-(5-nitro-2-furoyl)-N-methyl]amino]-3-azabicyclo-[3.1.0]hexane]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide
32. (S)-N-[[3-[3-Fluoro[4-[3-(1 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )-6-[N-(3-furoyl)-N-methyl]amino]-3-azabicyclo-[3.1.0]hexane]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide
- 10 33. (S)-N-[[3-[3-Fluoro[4-[3-(1 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )-6-[N-(5-bromo-2-furoyl)-N-methyl]amino]-3-azabicyclo-[3.1.0]hexane]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide
34. (S)-N-[[3-[3-Fluoro[4-[3-(1 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )-6-[N-(5-nitro-2-thienylmethyl)-N-methyl]amino]-3-azabicyclo-[3.1.0]hexane]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide
- 15 35. (S)-N-[[3-[3-Fluoro[4-[3-(1 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )-6-[N-(5-nitro-2-furylmethyl)-N-methyl]amino]-3-azabicyclo-[3.1.0]hexane]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide
36. (S)-N-[[3-[3-Fluoro[4-[3-(1 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )-6-[N-(5-formyl-2-furylmethyl)-N-methyl]amino-methyl]-3-azabicyclo-[3.1.0]hexane]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide
- 20 37. (S)-N-[[3-[3-Fluoro[4-[3-(1 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )-6-[N-(5-carboxyethyl-2-furylmethyl)-N-methyl]aminomethyl]-3-azabicyclo-[3.1.0]hexane]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide
- 25 38. (S)-N-[[3-[3-Fluoro[4-[3-(1 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )-6-[N-(2-thiopheneacetyl)-N-methyl]aminomethyl]-3-azabicyclo-[3.1.0]hexane]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide
39. (S)-N-[[3-[3-Fluoro[4-[3-(1 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )-6-[N-(5-nitro-2-thienylmethyl)-N-methyl]amino-methyl]-3-azabicyclo-[3.1.0]hexane]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide
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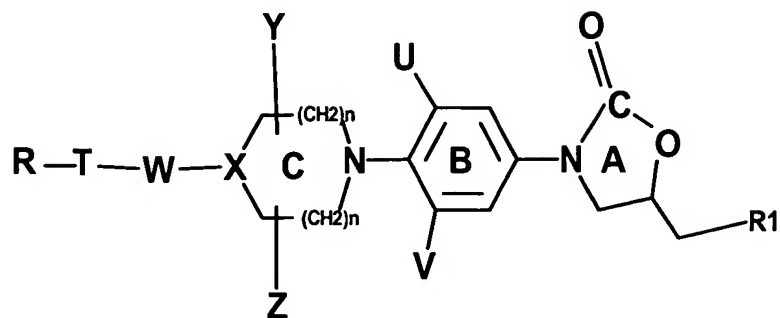
40. (S)-N-[[3-[3-Fluoro[4-[3-(1 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )-6-[N-(5-nitro-2-furylmethyl)-N-methyl]amino-methyl]-3-azabicyclo-[3.1.0]hexane]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide
- 5 41. (S)-N-[[3-[4-[4-(N-methyl-N-2furyl(5formyl)methylaminopiperidine-1-yl]-3-fluorophenyl]-2-oxo-oxazolidin-5-yl ]methyl]acetamide
42. (S)-N-[[3-[4-[4-(N-methyl-N-(3,5-difluorobenzoyl)aminopiperidine-1-yl]-3-fluorophenyl]-2-oxo-oxazolidin-5-yl] methyl]acetamide.
43. (S)-N-[[3-[4-[4-(N-methyl-N-(5-bromo-2-furoyl)aminopiperidine-1-yl]-3-fluorophenyl]-2-oxo-oxazolidin-5-yl] methyl]acetamide
- 10 44. (S)-N-[[3-[4-[4-(N-methyl-N-(5-nitro-2-furoyl)aminopiperidine-1-yl]-3-fluorophenyl]-2-oxo-oxazolidin-5-yl ]methyl]acetamide
45. (S)-N-[[3-[4-[4-(N-methyl-N-3- furoyl)aminopiperidine-1-yl]-3-fluorophenyl]-2-oxo-oxazolidin-5-yl ]methyl]acetamide.
- 15 46. (S)-N- {3-[4-[4-(N-methyl, N- 2-furoyl )aminopiperidine-1-yl]-3-fluorophenyl]-2-oxo-oxazolidin-5-yl methyl]acetamide
47. (S)-N- {3-[4-[4-(N-methyl,2-thiopheneacetyl)aminopiperidine-1-yl]-3-fluorophenyl]-2-oxo oxazolidin-5-yl methyl]acetamide
48. (S)-N-[[3-[4-[4-(N-methyl-N-2furylmethyl) aminopiperidine-1-yl]-3-fluorophenyl]-2-oxo-oxazolidin-5-yl ]methyl]acetamide
- 20 49. (S)-N-[[3-[4-[4-(N-methyl-N-3-furyl )aminopiperidine-1-yl]-3-fluorophenyl]-2-oxo-oxazolidin-5-yl] methyl]acetamide.
50. (S)-N-[[3-[4-[4-(N-methyl-N-2-furyl(5-nitro)methyl)aminopiperidine-1-yl]-3-fluorophenyl]-2-oxo-oxazolidin-5-yl] methyl]acetamide.
- 25 51. (S)-N-[[3-[4-[4-(N-methyl-N-2-thienyl(5-nitro)methyl)aminopiperidine-1-yl]-3-fluorophenyl]-2-oxo-oxazolidin-5-yl] methyl]acetamide.
52. (S)-N-[[3-[4-[4-(N-methyl-N-2-thienylmethyl)aminopiperidine-1-yl]-3-fluorophenyl]-2-oxo-oxazolidin-5-yl ]methyl]acetamide.
53. (S)-N-[[3-[4-[4-(N-methyl-N-(5-methyl-2-thienylmethyl)aminopiperidine-1-yl]-3-fluorophenyl]-2-oxo-oxazolidin-5-yl] methyl]acetamide
- 30 54. (S)-N- {3-[4-[4-(N-methyl,2-(5-bromo)thienylmethyl)aminopiperidine-1-yl]-3-fluorophenyl]-2-oxo-oxazolidin-5-yl methyl]acetamide

55. (S)-N-[[3-[3-Fluoro-4-[N-1[4-{2-furyl(5-formyl)methyl}]homopiperazinyl]phenyl]2-oxo-5-oxazolidinyl)methyl]acetamide
56. (S)-N-[[3-[3-Fluoro-4-[N-1[4-(2-thienylacetyl)]homopiperazinyl]phenyl]2-oxo-5-oxazolidinyl)methyl]acetamide
57. (S)-N-[[3-[3-Fluoro-4-[N-1[4-{2-thienyl(5-nitro)methyl}]homopiperazinyl]phenyl]2-oxo-5-oxazolidinyl)methyl]acetamide
58. (S)-N-[[3-[3-Fluoro-4-[N-1[4-(3-furylmethyl)]homopiperazinyl]phenyl]2-oxo-5-oxazolidinyl)methyl]acetamide
59. Preparation of (S)-N-[[3-[3-fluoro-4-[N-1{2-furyl-[4-(5-difluoromethyl)methyl}]piperazinyl]-2-oxo-5-oxazolidinyl]-methyl]acetamide.
60. (S)-N-[[3-[3-Fluoro-4-[N-1[4-(2-furyl(5-aldoxime)methyl}]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl)methyl]acetamide
61. (S)-N-[[3-[3-Fluoro-4-[N-1[4-{2-furyl(5-aldoxime(methyl-4-(N-carboxyaminophenyl acetate) methyl})piperazinyl]phenyl]-2-oxo-5-oxazolidinyl)methyl]acetamide
62. (S)-N-[[3-[3-Fluoro-4[N-1-[4-{2-furyl(5-hydrazone)-methyl}]piperazinyl]-phenyl]-2-oxo-5-oxazolidinyl]-methyl]acetamide
63. Preparation of (S)-N-[[3-[3-Fluoro-4-[N-1{2-furyl-[4-(5-hydroxymethyl)methyl}]piperazinyl]-2-oxo-5-oxazolidinyl)methyl]acetamide
64. (S)-N-[[3-[3-Fluoro-4-[N-1[4-{2-furyl(5-cyano)methyl}]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl)methyl]acetamide
65. (S)-N-[[3-Fluoro-4-[N-1[4-{2-furyl(5-carboxy)methyl}]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl)methyl]acetamide
66. (S)-N-[[3-Fluoro-4-[N-1[5-(1,3-dioxane)-2-furylmethyl]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl)methyl]acetamide
67. (S)-N-[[3-Fluoro-4-[N-1[5-(formamido)-2-furylmethyl]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl)methyl]acetamide
68. (S)-N-[[3-Fluoro-4-[N-1[5-(morpholine-1-carbonyl)-2-furylmethyl]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl)methyl]acetamide

69. (S)-N-[[3-Fluoro-4-[N-1[5-(4-(tert butoxy carbonyl)amino piperidine)-2-furylmethyl]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl] acetamide
70. (S)-N-[[3-Fluoro-4-[N-1[4-{(Z)-2-methoxyimino-2-(2-furyl)acetyl}]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide
- 5 71. (S)-N-[[3-[3-Fluoro[4-[3-(1 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )-6-[N-(2-thiopheneacetyl)-N-methyl]amino]-3-azabicyclo-[3.1.0]hexane]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide
72. (S)-N-[[3-[3-Fluoro[4-[3-(1 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )-6-[N-(5-formyl-2-furylmethyl)-N-methyl]amino]-3-azabicyclo-[3.1.0]hexane]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide
- 10 73. (S)-N-[[3-[3-Fluoro[4-[3-(1 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )-6-[N-(3-thienoyl)-N-methyl]amino]-3-azabicyclo[3.1.0]hexane]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide
74. (S)-N-[[3-[3-fluoro-4-[N-1{2-furyl-[4-(5-fluoromethyl)methyl}]piperazinyl]-2-oxo-5-oxazolidinyl]-methyl]acetamide.
- 15

4. A pharmaceutical composition comprising the compound of claims 1, 2, or 3 and a pharmaceutical acceptable carrier.
5. A pharmaceutical composition comprising a pharmaceutically effective amount of compound according to claims 1, 2, or 3, or a physiologically acceptable acid addition salt thereof with a pharmaceutical acceptable carrier for treating microbial infections.
- 20 6. A method of treating or preventing microbial infections in a mammal comprising administering to the said mammal, the pharmaceutical composition according to claim 5.
- 25

7. A process for preparing a compound of Formula I



FORMULA I

and its pharmaceutically acceptable salts, enantiomers, diastereomers, N-oxides, prodrugs or metabolites, wherein

T is five to seven membered heterocyclic ring, aryl, substituted aryl, bound to the ring C with a linker w and the heterocyclic and aryl rings are further substituted by a group represented by R,

wherein R is selected from the group consisting of  $-\text{CN}$ ,  $\text{COR}_5$ ,  $\text{COOR}_5$ ,  $\text{N}(\text{R}_6, \text{R}_7)$ ,  $\text{CON}(\text{R}_6, \text{R}_7)$ ,  $\text{CH}_2\text{NO}_2$ ,  $\text{NO}_2$ ,  $\text{CH}_2\text{R}_8$ ,  $\text{CHR}_9$ ,  $-\text{CH} = \text{N}-\text{OR}_{10}$ ,  $-\text{C}=\text{CH}-\text{R}_5$ , wherein  $\text{R}_5$  is selected from the group consisting of H, optionally substituted  $\text{C}_1\text{-C}_{12}$ , alkyl,  $\text{C}_3\text{-}_{12}$ , cycloalkyl, aryl, heteroaryl,  $\text{R}_6$  and  $\text{R}_7$ , are independently selected from the group consisting of H, optionally substituted  $\text{C}_1\text{-}_{12}$  alkyl,  $\text{C}_3\text{-}_{12}$  cycloalkyl,  $\text{C}_1\text{-}_6$  alkoxy;  $\text{R}_8$  and  $\text{R}_9$  are independently selected from the group consisting of H,  $\text{C}_1\text{-}_6$  alkyl, F, Cl, Br,  $\text{C}_1\text{-}_{12}$  alkyl substituted with one or more of F, Cl, Br, I,  $\text{OR}_4$ ,  $\text{SR}_4$ ,  $\text{N}(\text{R}_6, \text{R}_7)$  wherein  $\text{R}_4$  is selected from the group consisting of H,  $\text{C}_1\text{-}_{12}$  alkyl,  $\text{C}_3\text{-}_{12}$  cycloalkyl,  $\text{C}_1\text{-}_6$  alkoxy,  $\text{C}_1\text{-}_6$  alkyl substituted with one or more F, Cl, Br, I or OH and  $\text{R}_6$  and  $\text{R}_7$  are the same as defined earlier,  $\text{R}_{10}$  is selected from the group consisting of

H, optionally substituted from H, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub>, alkoxy, C<sub>1-6</sub> alkyl, aryl, heteroaryl;

**n** is an integer in the range from 0 to 3;

**X** is CH, CH-S, CH-O and N;

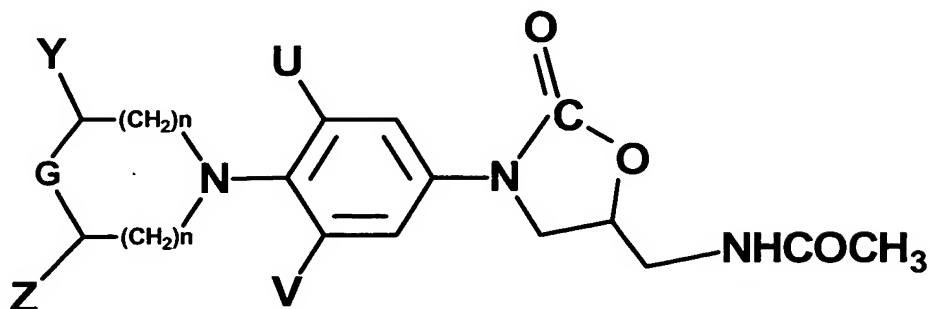
5        **Y and Z** are independently selected from the group consisting of hydrogen, C<sub>1-6</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>0-3</sub> bridging group;

**U and V** are independently selected from the group consisting of optionally substituted C<sub>1-6</sub> alkyl, F, Cl, Br, C<sub>1-12</sub> alkyl substituted with one or more of F, Cl, Br, I, preferably U and V are hydrogen or fluoro;

10        **W** is selected from the group consisting of CH<sub>2</sub>, CO, CH<sub>2</sub>NH, -NHCH<sub>2</sub>, -CH<sub>2</sub>NHCH<sub>2</sub>, -CH<sub>2</sub>-N(R<sub>11</sub>)CH<sub>2</sub>-, CH<sub>2</sub>(R<sub>11</sub>)N-, CH(R<sub>11</sub>), S, CH<sub>2</sub>(CO), NH wherein R<sub>11</sub> is optionally substituted with C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl, aryl, heteroaryl; and

15        **R<sub>1</sub>** is selected from the group consisting of -NHC(=O)R<sub>2</sub> wherein R<sub>2</sub> is hydrogen, C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl substituted with one or more of F, Cl, Br, I or OH; N(R<sub>3</sub>, R<sub>4</sub>); -NR<sub>2</sub>C(=S)R<sub>3</sub>; -NR<sub>2</sub>C(=S)SR<sub>3</sub> wherein R<sub>2</sub> is the same as defined above and R<sub>3</sub> and R<sub>4</sub> are independently selected from the group consisting of H, C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl substituted with one or more of F, Cl, Br, I or OH,

which comprises reacting an amine compound of Formula V

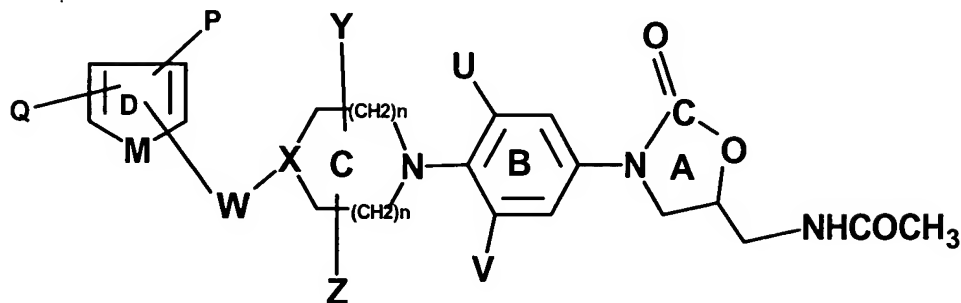


FORMULA V

with a heterocyclic compound of Formula R-T-W-  $R_{12}$  wherein G in amines of Formula V is defined as NH, CH(NHR<sub>13</sub>), -CH-CH<sub>2</sub>NHR<sub>13</sub> wherein R<sub>13</sub> is H, ethyl, methyl, isopropyl, acetyl, cyclopropyl, alkoxy or acetyl and Y, Z, U, V, R<sub>1</sub>, n, R, T and W are the same as defined earlier and R<sub>12</sub> is a suitable leaving group selected from the group comprising of fluoro, chloro, bromo, SCH<sub>3</sub>, -SO<sub>2</sub>CH<sub>3</sub>, -SO<sub>2</sub>CF<sub>3</sub> or OC<sub>6</sub>H<sub>5</sub>.

8. A process for preparing a compound of Formula I as claimed in claim 7, wherein W=CH<sub>2</sub> and R-T-W-R<sub>12</sub> is a five membered heterocyclic ring with aldehyde group and the compound of Formula I is produced by reductive amination.
9. A process for preparing a compound of Formula I as claimed in claim 7, wherein W = CO and R-T-W-R<sub>12</sub> is a five membered heterocyclic ring with carboxylic acid, and amino compound of Formula V is acylated with activated esters in presence of condensing agents comprising 1,3-dicyclohexylcarbodiimide (DCC) and 1-(3-dimethylaminopropyl)-3-ethylcarbodiimide (EDC).

10. A process for the preparation of compound of Formula II



FORMULA II

wherein

**n** is an integer in the range from 0 to 3;

**X** is CH, CH-S, CH-O and N;

- 10 **Y and Z** are independently selected from the group consisting of hydrogen, C<sub>1-6</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>0-3</sub> bridging group;

**U and V** are independently selected from the group consisting of optionally substituted C<sub>1-6</sub> alkyl, F, Cl, Br, C<sub>1-12</sub> alkyl substituted with one or more of F, Cl, Br, I, preferably U and V are hydrogen or fluoro;

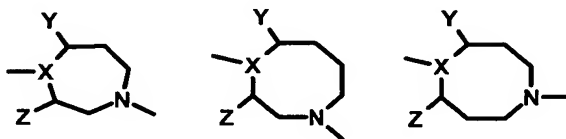
- 15 **W** is selected from the group consisting of CH<sub>2</sub>, CO, CH<sub>2</sub>NH, -NHCH<sub>2</sub>, -CH<sub>2</sub>NHCH<sub>2</sub>, -CH<sub>2</sub>-N(R<sub>11</sub>)CH<sub>2</sub>-, CH<sub>2</sub>(R<sub>11</sub>)N-, CH(R<sub>11</sub>), S, CH<sub>2</sub>(CO), NH wherein R<sub>11</sub> is optionally substituted with C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl, aryl, heteroaryl; and

- 20 **Q and P** are independently selected from the group consisting of -CN, COR<sub>5</sub>, COOR<sub>5</sub>, N(R<sub>6</sub>, R<sub>7</sub>), CON(R<sub>6</sub>, R<sub>7</sub>), CH<sub>2</sub>NO<sub>2</sub>, NO<sub>2</sub>, CH<sub>2</sub>R<sub>8</sub>, CHR<sub>9</sub>, -CH=N-OR<sub>10</sub>, C=CH-R<sub>5</sub>, wherein R<sub>5</sub> is selected from the group consisting of H,

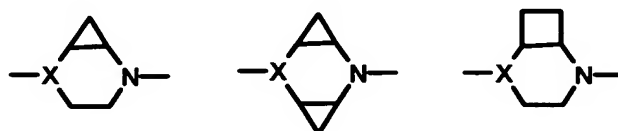


optionally substituted  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl, aryl, heteroaryl;  $R_6$  and  $R_7$  are independently selected from the group consisting of H, optionally substituted  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy;  $R_8$  and  $R_9$  are independently selected from the group consisting of H,  $C_{1-6}$  alkyl, F, Cl, Br,  $C_{1-12}$  alkyl substituted with one or more of F, Cl, Br, I,  $OR_4$ ,  $SR_4$ , wherein  $R_4$  is the same as defined before,  $N(R_6, R_7)$ ,  $R_{10}$  is selected from the group consisting of H, optionally substituted  $C_{1-12}$  alkyl,  $C_{3-12}$  cycloalkyl,  $C_{1-6}$  alkoxy,  $C_{1-6}$  alkyl, aryl, heteroaryl except  $W = (CO)$ , Q and P = H.

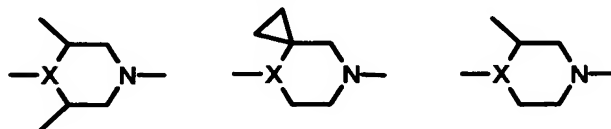
Ring C in Formula II is 6-8 membered or of larger size and the larger rings have either two or three carbons between each nitrogen atom, comprising of



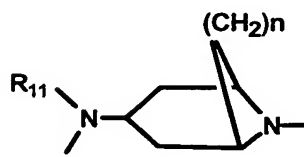
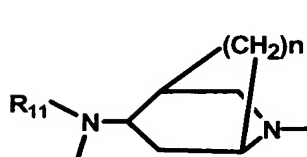
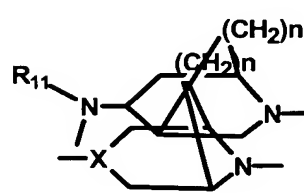
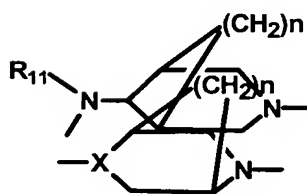
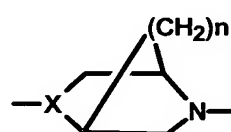
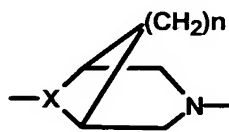
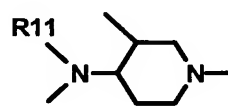
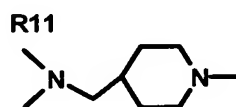
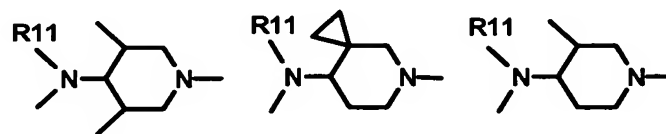
and may be bridged to form a bicyclic system as shown below,



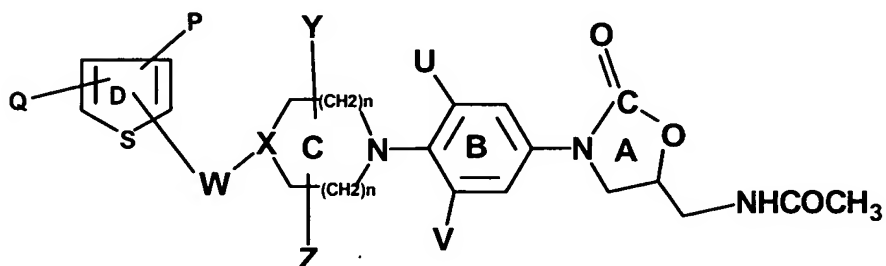
ring C is optionally substituted by Y and Z with alkyl groups, cycloalkyl groups, fluoro group, carboxylic and corresponding esters, amides, substituted alkyls or bridging alkyl groups are as shown below:



six membered ring C with X = -CH-(NHR<sub>11</sub>), (wherein R<sub>11</sub> is the same as defined earlier) is selected from the group consisting of the following rings;

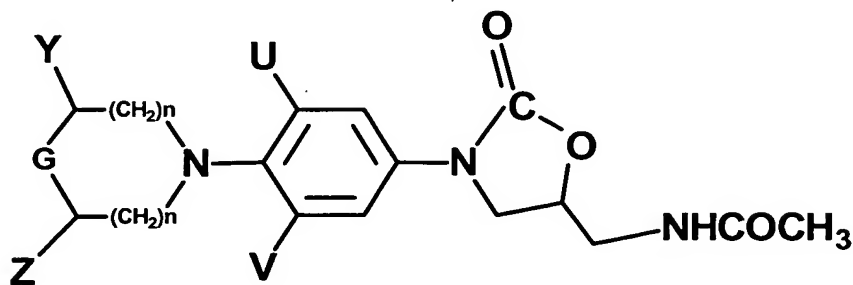


wherein M = Sulphur is shown by compounds of Formula III,



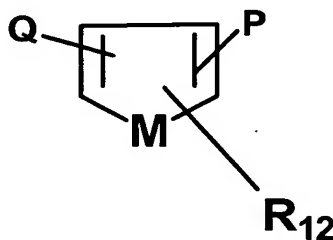
FORMULA III

wherein **P**, **Q**, **U**, **V**, **X**, **Y**, **Z**, **W** and **n** in Formula III are the same as previously defined, wherein the process comprising reacting a compound of Formula V



FORMULA V

with a compound of Formula VI

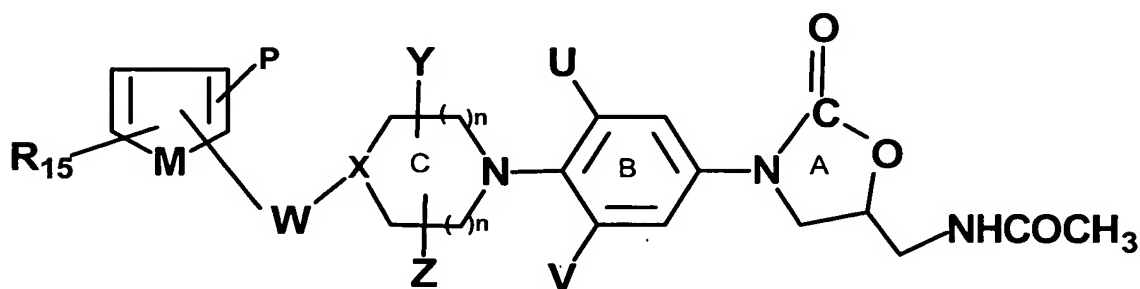


FORMULA VI

wherein **P**, **Q**, **R<sub>12</sub>**, **Y**, **Z**, **G**, **n**, **U** and **V** are the same as defined earlier.

11. A process for preparing a compound of Formula II as claimed in claim 10, in a suitable solvent selected from the group consisting of dimethylformamide, dimethylacetamide, ethanol or ethylene glycol at a suitable temperature in the range of -70°C to 180°C in the presence of a suitable base selected from the group consisting of triethyl amine, diisopropyl amine, potassium carbonate and sodium bicarbonate.

12. A process of preparing a compound of Formula II as claimed in claim 10 wherein Formula VI is furalehyde and reductive alkylation of the amine of Formula V is performed with a reducing agent.
13. A process for preparing a compound of Formula II as claimed in claim 10 wherein Formula VI is furoic acid.
14. A process for preparing a compound of Formula II as claimed in claim 10 wherein the compounds of Formula II having carbonyl link are prepared by reacting heteroaromatic compound of the Formula VI including N- methyl pyrrole with the intermediate amine of Formula V in the presence of triphosgene or phosgene and carbonyl linkers are introduced between heteroaromatic compound comprising reacting 3- bromothiophene and amine of Formula V with carbon monoxide and the catalyst is selected from the group consisting of Pd (PPh<sub>3</sub>)<sub>2</sub>Cl<sub>2</sub> and extended chain pyrroles having dicarbonyl linkers are obtained by treatment of oxalyl chloride and amine of the Formula V.
15. A process for preparing a compound of Formula VIII



FORMULA VIII

wherein

**n** is an integer in the range from 0 to 3;

**X** is CH, CH-S, CH-O and N;

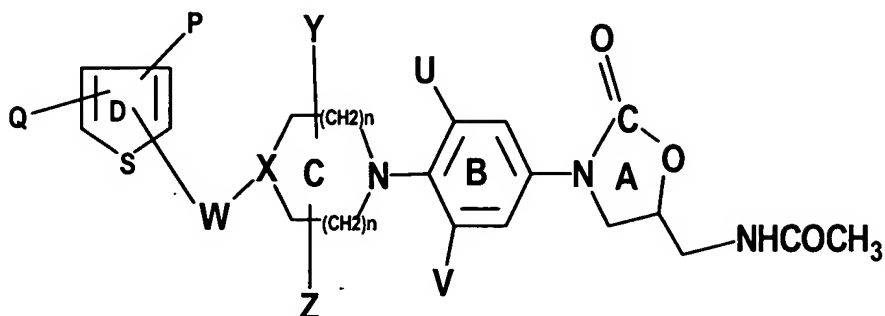
**Y and Z** are independently selected from the group consisting of hydrogen, C<sub>1-6</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>0-3</sub> bridging group;

5 **U and V** are independently selected from the group consisting of optionally substituted C<sub>1-6</sub> alkyl, F, Cl, Br, C<sub>1-12</sub> alkyl substituted with one or more of F, Cl, Br, I, preferably U and V are hydrogen or fluoro;

**W** is selected from the group consisting of CH<sub>2</sub>, CO, CH<sub>2</sub>NH, -NHCH<sub>2</sub>, -CH<sub>2</sub>NHCH<sub>2</sub>, -CH<sub>2</sub>-N(R<sub>11</sub>)CH<sub>2</sub>-, CH<sub>2</sub>(R<sub>11</sub>)N-, CH(R<sub>11</sub>), S, CH<sub>2</sub>(CO), NH  
10 wherein R<sub>11</sub> is optionally substituted with C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl, aryl, heteroaryl;

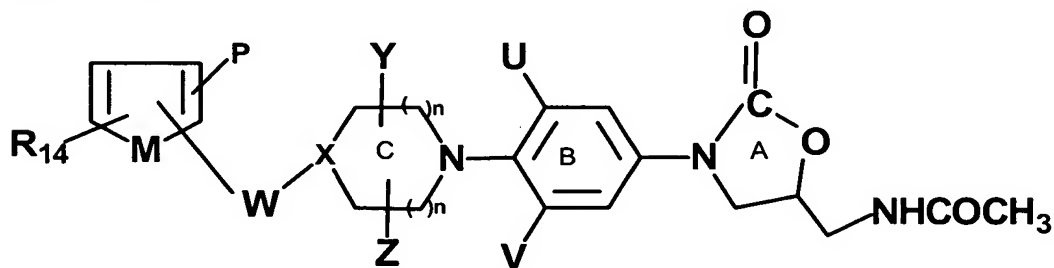
**Q and P** are independently selected from the group consisting of -CN, COR<sub>5</sub>, COOR<sub>5</sub>, N(R<sub>6</sub>, R<sub>7</sub>), CON(R<sub>6</sub>, R<sub>7</sub>), CH<sub>2</sub>NO<sub>2</sub>, NO<sub>2</sub>, CH<sub>2</sub>R<sub>8</sub>, CHR<sub>9</sub>, -CH=N-OR<sub>10</sub>, C=CH-R<sub>5</sub>, wherein R<sub>5</sub> is selected from the group consisting of H, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, aryl, heteroaryl; R<sub>6</sub> and R<sub>7</sub>  
15 are independently selected from the group consisting of H, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy; R<sub>8</sub> and R<sub>9</sub> are independently selected from the group consisting of H, C<sub>1-6</sub> alkyl, F, Cl, Br, C<sub>1-12</sub> alkyl substituted with one or more of F, Cl, Br, I, OR<sub>4</sub>, SR<sub>4</sub>, wherein R<sub>4</sub> is  
20 the same as defined before, N(R<sub>6</sub>, R<sub>7</sub>), R<sub>10</sub> is selected from the group consisting of H, optionally substituted C<sub>1-12</sub> alkyl, C<sub>3-12</sub> cycloalkyl, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl, aryl, heteroaryl except W = (CO), Q and P = H;

M = Sulphur is shown by compounds of Formula III



FORMULA III

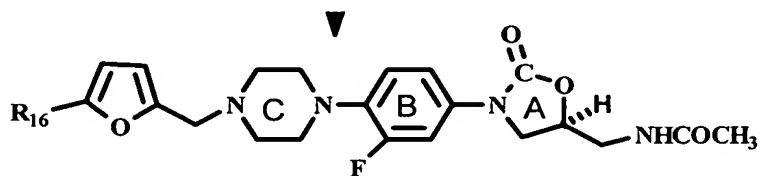
and  $R_{15}$  is the same as Q defined earlier, comprising converting a compound of Formula VII



FORMULA VII

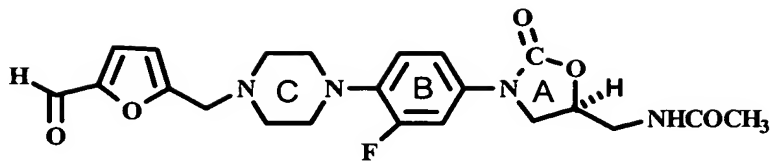
wherein in U, V, Y, Z, X, W, P, n and M are the same as defined earlier and  $R_{14}$  is any group which can be converted to group  $R_{15}$  in one to five steps.

16. A process for preparing a compound of Formula XI



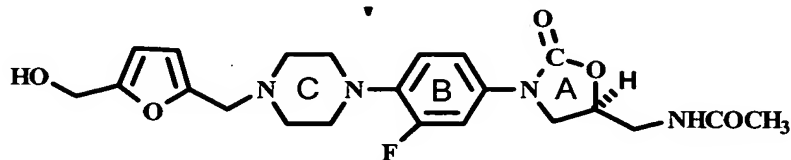
FORMULA XI

( $R_{16} = -CH_2F$  or  $-CH_2F_2$ ) by reacting a compound of Formula IX



FORMULA IX

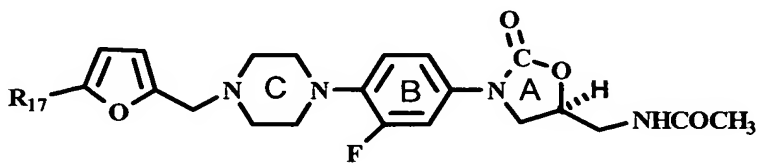
with sodium borohydride to produce a compound of Formula X



FORMULA X

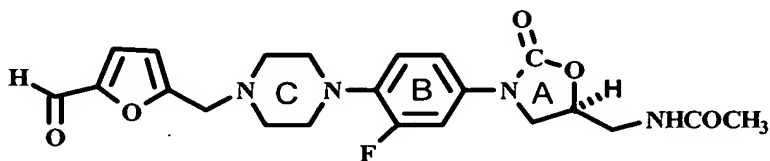
and further reacting this compound with diethylamino sulfurtrifluoride to produce compound of Formula XI.

17. A process for preparing a compound of Formula XII



FORMULA XII

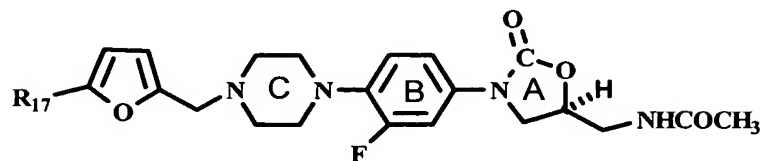
wherein  $R_{17} = \text{N-OH}$  which comprises reacting (S)-N-[[3-Fluoro-4-[N-1[4-{2-furyl(5-formyl)methyl}]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]-methyl] acetamide of Formula IX



FORMULA IX

with hydroxylamine.

18. A process for preparing a compound of Formula XII

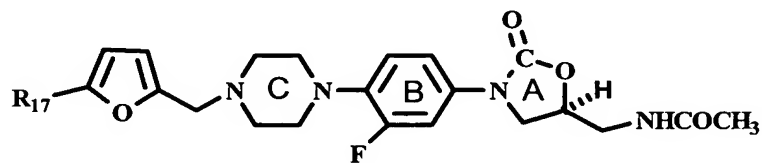


5

FORMULA XII

wherein  $R_{17} = \text{CH}_2=\text{N}-\text{NH}_2$  which comprises reacting (S)-N-[[3-[3-Fluoro-4[N-1-[4-{2-furyl-(5-hydrazone)-methyl}]-piperazinyl]-phenyl]-2-oxo-5-oxazolidinyl]-methyl]acetamide with hydrazine hydrate.

19. A process for preparing a compound of Formula XII



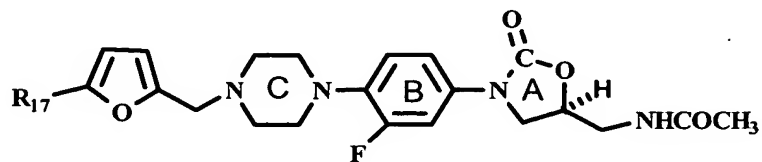
10

FORMULA XII

wherein  $R_{17} = \text{CH}_2=\text{N}-\text{O}-\text{C}(=\text{O})-\text{NH}-\text{C}_6\text{H}_4-\text{CH}_2\text{COOCH}_3$  which comprises reacting (S)-N-[[3-[3-Fluoro-4-[N-1-[4-(2-furyl-(5-aldoxime)methyl}]] piperazinyl] phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide with isocyanate.

15

20. A process for preparing a compound of Formula XII



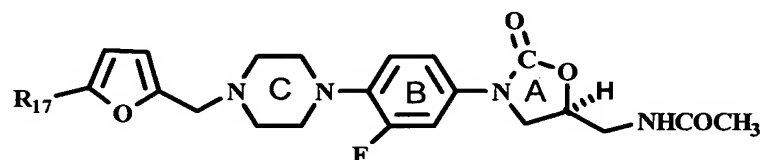
20

FORMULA XII



wherein  $R_{17} = \text{CN}$  which comprises reacting (S)-N-[[3-[3-Fluoro-4-[N-1[4-{2-furyl(5-cyano)methyl}]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide with triflic anhydride and triethylamine.

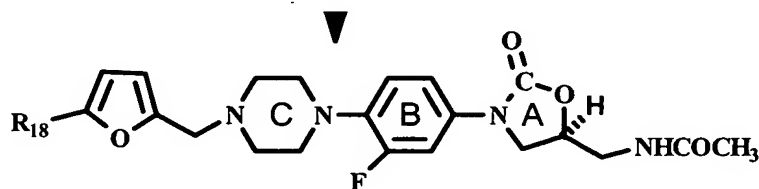
21. A process for preparing a compound of Formula XII



FORMULA XII

10 wherein  $R_{17} = \text{---CH---}$  which comprises reacting (S)-N-[[3-Fluoro-4-[N-1[5-(1,3-dioxane)-2-furylmethyl]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide with 1,3-propane diol and  $\text{BF}_3$  etherate.

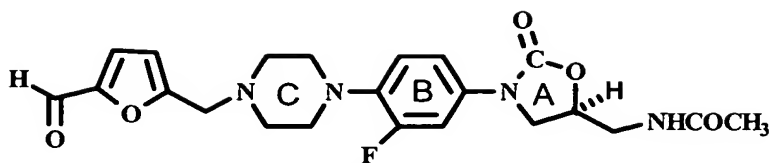
22. A process for the preparation of the compound of Formula XIV



FORMULA XIV

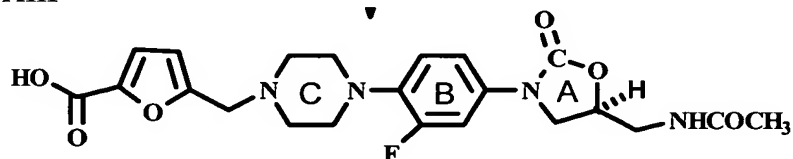
wherein  $R_{18} = \text{---C(=O)NH}_2$

20 which comprises reacting (S)-N-[[3-Fluoro-4-[N-1[4-{2-furyl(5-formyl)-methyl}]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl] acetamide of Formula IX



FORMULA IX

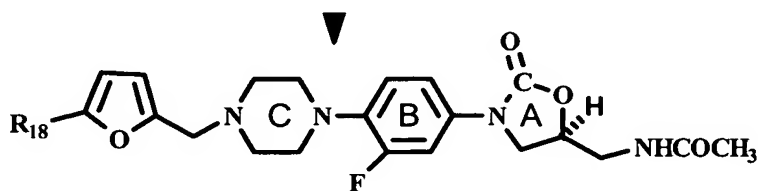
5 with  $\text{Ag}_2\text{O}$  to produce (S)-N-[[3-Fluoro-4-[N-1[4-{2-furyl(5-carboxy)methyl}]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl] acetamide of Formula XIII followed by reacting (S)-N-[[3-Fluoro-4-[N-1[4-(2-furyl- (5-carboxy-ethyl)methyl)piperazinyl] phenyl]- 2-oxo-5-oxazolidinyl]methyl] acetamide of Formula XIII



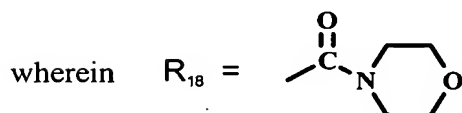
FORMULA XIII

with aqueous ammonia to produce Formula XIV.

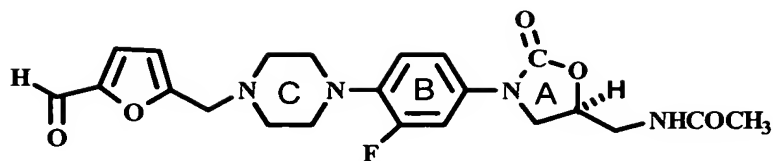
23. A process for the preparation of the compound of Formula XIV



FORMULA XIV

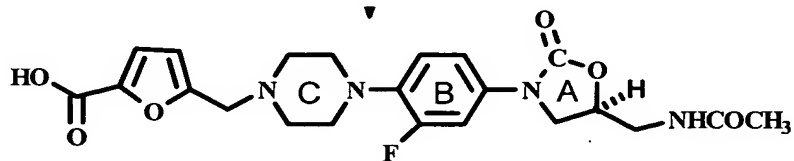


which comprises reacting (S)-N-[[3-Fluoro-4-[N-1[4-{2-furyl(5-formyl)-methyl}] piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl] acetamide of Formula IX



FORMULA IX

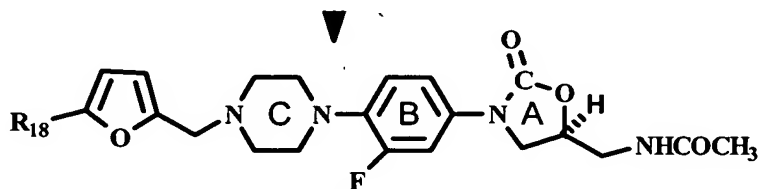
- 5 with Ag<sub>2</sub>O to produce (S)-N-[[3-Fluoro-4-[N-1[4-{2-furyl(5-carboxy)methyl}]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl] acetamide of Formula XIII followed by reacting (S)-N-[[3-Fluoro-4-[N-1[4-(2-furyl- (5-carboxy-ethyl)methyl)piperazinyl] phenyl]- 2-oxo-5-oxazolidinyl]methyl] acetamide of Formula XIII



FORMULA XIII

with thionyl chloride to produce Formula XIV.

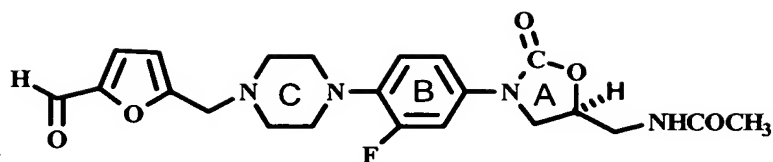
- 15 24. A process for the preparation of the compound of Formula XIV



FORMULA XIV

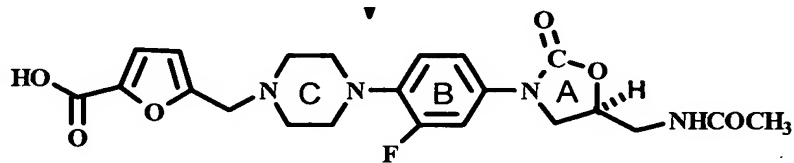
20 wherein R<sub>18</sub> =

which comprises reacting (S)-N-[[3-Fluoro-4-[N-1[4-{2-furyl(5-formyl)-methyl}] piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl] acetamide of Formula IX



FORMULA IX

5 with Ag<sub>2</sub>O to produce (S)-N-[[3-Fluoro-4-[N-1[4-{2-furyl(5-carboxy)methyl}]piperazinyl]phenyl]-2-oxo-5-oxazolidinyl]methyl] acetamide of Formula XIII followed by reacting (S)-N-[[3-Fluoro-4-[N-1[4-(2-furyl- (5-carboxyethyl)methyl)piperazinyl] phenyl]- 2-oxo-5-oxazolidinyl]methyl] acetamide of Formula XIII



FORMULA XIII

with morpholine in the presence of oxalyl chloride to produce Formula XIV.